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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,517	03/08/2002	Takafumi Noguchi	Q66506	3791

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EXAMINER

LAM, HUNG H

ART UNIT PAPER NUMBER

2622

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,517

Applicant(s)

NOGUCHI, TAKAFUMI

Examiner

Hung H. Lam

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/24/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 03/24/06 and 05/24/06 has been entered.

Response to Amendment

2. The amendments, filed on 03/24/06, have been entered and made of record. Claims 1-13 are pending.

Response to Arguments

3. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inai et al. (US-4,437,111) in view of Konishi (US-4,774,564) and further in view of Nishiyama (US-5,293,225).

Regarding **claim 1**, Inai et al. disclose an image capturing method in which an image of a subject is captured by an image capturing device using image capturing optics (Fig. 3, optical lens 1-4; col. 2, lines 22-28) and an image capturing signal from said image capturing device (5) is subjected to specified processing schemes including a color separating process (Fig. 3, Y color separator process 7-11; col. 2, lines 39-51), thereby producing an image signal, said method comprising the steps of:

determining whether sensitivity of said image capturing device is insufficient or not during image capturing (Fig. 3, brightness detector 13, brightness determining circuit 14; col. 2, lines 51-67);

when the sensitivity of said image capturing device is insufficient, relatively increasing at least one of an overlapping region of spectral sensitivity of said image capturing device (col. 4, lines 50-61; when brightness is below the set level, infrared filter is removed to increase the sensitivity of the pickup-tube);

when the sensitivity of said image capturing device is sufficient, relatively decreasing at least one of the overlapping region of the spectral sensitivity of said image capturing device (col. 4, lines 38-49; when brightness is above the set level, infrared filter is inserted to decrease the sensitivity of the pickup-tube).

However, Inai et al. fail to disclose that when the brightness is below or above the set level, the corresponding intensity of color separating process is increased or decreased.

In the same field of endeavor, Konishi teaches an electronic still camera wherein the intensity of the RGB/color separating process is set to a predetermined level if it is possible (Figs. 6 and 7) or disengaged and continued in manual mode (col. 13, lines 47-53). Konishi further teaches that the gains of the G and B signals of the color separating process are increased when color temperature detects low light; otherwise, the system is disengaged to complete the photographing in manual mode (col. 13, lines 30-55). In addition, Konishi teaches that the gain of the color separation and gain adjustment unit 50 are adjusted on the basis of the color temperature data obtained by color temperature sensor 78 and the incident light volume or quantity from the scene obtained from photosensitive device 36 (Konishi: Col. 11, Ln. 28-42; it is noted that by adjusting the gain, the intensity of the color separation unit must be increased or decreased. Also on the basis of information sent by the color temperature sensor 78 and sensor 36, the main control 58 must determine the sufficiency / insufficiency of the sensitivity of the image capturing device for adjusting the gain of the color separation unit 50 accordingly). In light of the teaching from Konishi, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Inai to increase or decrease the gain (intensity) of the color separating process as taught by Konishi and thus controlling the gain-variable of the color separation in accordance to the data obtained by the color temperature sensor/ photo sensitive device (Konishi, col. 3, lines 47-53).

However, Inai in view of Konishi fails to disclose wherein, when relatively increasing or decreasing the intensity of said color separating process, an occurrence of noise generation is not thereby increased during color separation.

In the same field of endeavor, Nishiyama teaches a color processing circuit which separates color component from multiplexed signal (abstract; Figs. 1 and 6: color signal processing circuit 5; Col. 4, Ln. 28-30; Col. 6, Ln. 33-Ln. 41). Nishiyama further teaches that the color processing circuit not only carries color separation process, but carries out noise removal processing operation (abstract; Col. 7, Ln. 18- Col. 8, Ln. 51. Therefore, regardless of the changes of light intensity in Inai and Konishi references, noised occurrences are not increased during color separation process). In light of the teaching from Nishiyama, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Inai and Konishi to include a color processing circuit as taught by Nishiyama in order to perform noise removal operation and color separation process. The modifications thus provide clean color-separation out-put signals regardless of input signals.

Regarding **claim 2**, Inai in view of Konishi and further in view of Nishiyama discloses the image capturing method wherein the overlapping region of the spectral sensitivity of said image capturing device is an infrared region (Inai, Fig. 3, Infrared Filter 3; col. 3, lines 1-12; the spectral sensitivity of the image capturing device is adjusted by inserting or removing the infrared filter).

Regarding **claim 3**, Inai in view of Konishi and further in view of Nishiyama fails to explicitly disclose that the color separating process is an under color removal scheme.

Official Notice is taken that it is well known and expected in the art that a color separating default condition includes a color removal process. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was to modify the device of Inai, Konishi and Nishiyama to include an under color removal scheme in a color separating process in order to secure gradation and eliminate mosquito noise generation. The modifications thus provide better image-data.

Regarding **claim 4**, all limitations are contained in claim 1. See the rejection of claim 1 above.

Regarding **claim 5**, all limitations are contained in claim 2. See the rejection of claim 2 above.

Regarding **claim 6**, all limitations are contained in claim 3. See the rejection of claim 3 above.

Regarding **claim 7**, Inai in view of Konishi and further in view of Nishiyama discloses the image capturing apparatus, wherein after the image capturing device (Konishi: Fig. 1; CCD 22) captures the image of a subject the image is converted to exposure data and the exposure data is subjected to color separation (Konishi: see Fig. 1; CCD 22 inherently captures an image

and converts the exposure data to RGB signal which is then sent and subjected to the color separation unit 50).

Regarding **claims 8 and 9**, all limitations are contained in claim 1. See the rejection of claim 1 above.

Regarding **claim 10**, Inai in view of Konishi and further in view of Nishiyama discloses the image capturing apparatus, wherein said device for producing the image signal by performing specified processing schemes does not generate noise (Nishiyama: abstract; Col. 7, Ln. 18- Col. 8, Ln. 51).

Regarding **claim 11**, Inai in view of Konishi and further in view of Nishiyama discloses the image capturing apparatus wherein said image capturing apparatus (Konishi: see the camera in Fig. 1) comprises a device (Konishi: Fig. 3; AE control 66 and shutter drive 40) for maintaining a consistent aperture (Konishi: Fig. 3; Col. 6, Ln. 66 - Col. 7, Ln. 7-18; AE control 66 inherently controls a consistent aperture in accordance with a light intensity measured at the photosensitive element 36).

Regarding **claim 12** Inai in view of Konishi and further in view of Nishiyama discloses the image capturing apparatus, wherein said image capturing apparatus comprises a device (Konishi: Fig. 3; AE control 66 and diaphragm drive 28) for maintaining a consistent shutter speed (Konishi: Fig. 3; Col. 7, Ln. 7-18; AE control 66 inherently controls a consistent shutter / diaphragm speed in accordance with a light intensity measured at the photosensitive element 36).

Regarding **claim 13**, Inai in view of Konishi and further in view of Nishiyama discloses the image capturing apparatus wherein said sensitivity is based on a spectral response of said image capturing device (see Inai: Col. 1, Ln. 10-22 wherein the sensitivity spectrum of recent high sensitivity image pickup devices have considerable sensitivities in the infrared range of about 700-830 nm as shown in Fig. 1; see Col. 2, Ln. 50- Col. 3, Ln. 11 wherein the infrared filter is inserted to delete infrared component on the basis of a predetermined high brightness level which the sensitivity spectrum of curve b, c and d in Fig. 1 approaches the cutoff maximum sensitivity $\mu A/\mu W$).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


a) Fujiwara (US-6,643,399) discloses an under color removal process for securing gradation without increasing mosquito noise.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung H. Lam whose telephone number is 571-272-7367. The examiner can normally be reached on Monday - Friday 8AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NGOC YEN VU can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HL
07/24/06



DAVID OMETZ
SUPERVISORY PATENT EXAMINER